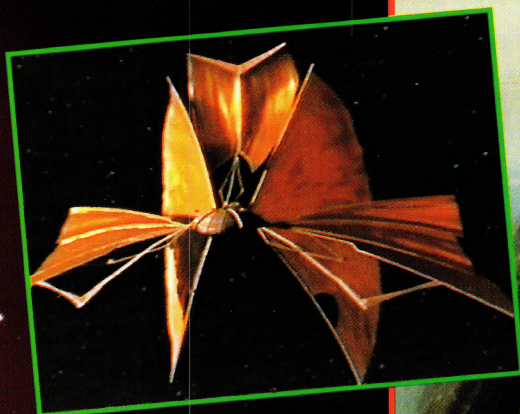




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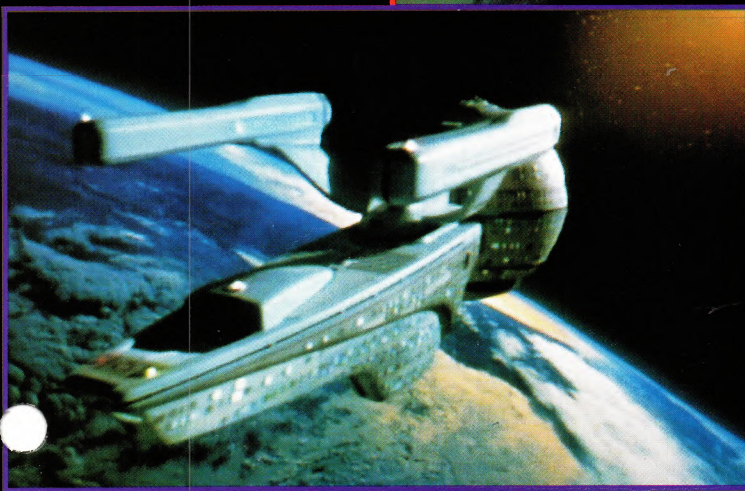


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## CONTENTS: PART 11

### The Guide to the STAR TREK Galaxy

The FOUR QUADRANTS  
The ALPHA QUADRANT (Part 2)  
The CRYSTALLINE ENTITY

### FEDERATION STARFLEET

U.S.S. VOYAGER Landing Procedure  
U.S.S. ENTERPRISE NCC-1701-D Battle Bridge  
U.S.S. PASTEUR

### Non-FEDERATION Starships

BAJORAN SOLAR SAILING SHIP

### Personnel Files

DR. McCoy: The Healer  
ENSIGN RO

### Equipment & Technology

The PADD: Design and Operation  
Life Support Systems

### Starship Log

STAR TREK: The Original Series  
'What are Little Girls Made Of'/'Dagger of the Mind'  
STAR TREK: VOYAGER –  
'Emanations'/'Prime Factors'

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NEXT WEEK:



### The Guide to the STAR TREK Galaxy

The STAR TREK Timeline (Parts 11 & 12)  
The ALPHA QUADRANT (Part 3)  
The DOMINION  
EMPATHIC METAMORPHS

### FEDERATION STARFLEET

Saucer Section Separation  
NEELIX's Galley

### Non-FEDERATION Starships

ANGOSIAN TRANSPORT VESSEL

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NURSE CHAPEL in Love  
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Hand PHASERS: 2360s

### Starship Log

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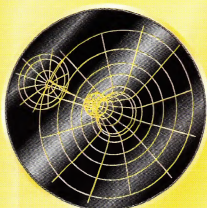
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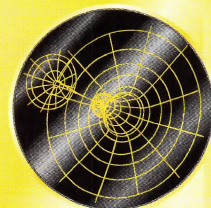


SPACE  
PHENOMENA

# The Guide to the STAR TREK Galaxy

FILE 5

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SPACE  
PHENOMENA

## THE CRYSTALLINE ENTITY

The *U.S.S. Enterprise NCC-1701-D* encounters this lethal phenomenon twice, finding death and destruction in its wake. Will the crew be able to communicate with the **Crystalline Entity**, or will it destroy them?

**T**he **Crystalline Entity** is an organic, spacefaring life form that absorbs enormous amounts of energy to sustain itself. It has a crystalline structure, resembling a giant snowflake, and is capable of traveling at warp speed. To this date, **Starfleet** has only encountered one example of this species.

Starfleet has had limited contact with the Entity, so much of the information about it is conjectural. What information does exist is

based on 12 attacks on planets and colonies.

The Entity is first identified by the crew of the *U.S.S. Enterprise NCC-1701-D* in 2364, during a mission to **Omicron Theta**. All organic life on the colony was destroyed in 2336. Four hundred and eleven colonists were lost; only the android **Data** survived.

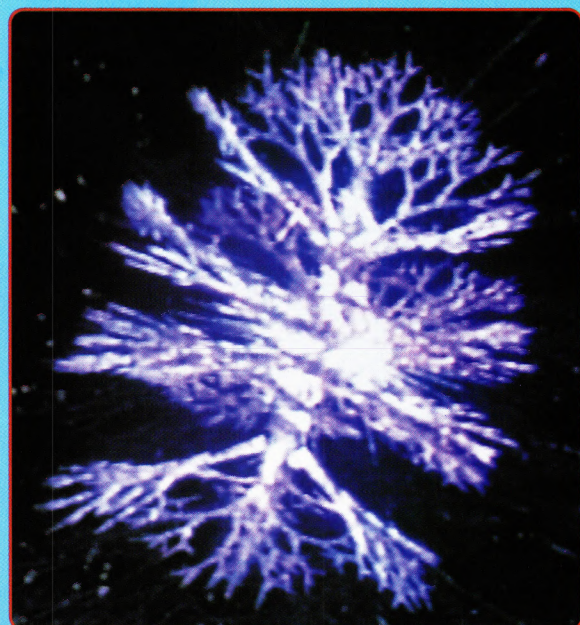
During the *Enterprise's* mission, Data's 'brother,' **Lore**, is discovered, and it emerges that the Entity, which is acting with Lore, was responsible for the

disaster. Eighteen years later, the planet's ecosystem has still not recovered.

### Nemesis

Most of the **Federation's** information about the Crystalline Entity comes from the work of **Dr. Kila Marr**, a xenologist who makes a special study of the Entity after her son, **Raymond**, is killed at Omicron Theta.

Dr. Marr regards the Entity as a deadly predator that should be hunted down and killed. However,



▲ Resembling a large snowflake, the **Crystalline Entity** is an organic life form with large tendril-like arms. The origins of the **Crystalline Entity** are unknown, as is the number of similar entities.

### AGENT OF DESTRUCTION



▲ The **Crystalline Entity** works by literally scouring a planet of all life forms, plant and animal. As it approaches the planet surface, a wide-angled beam is engaged which acts as a sweeper, destroying every living thing.



▲ With the beam activated from within the heart of the entity, its destructive path over the surface begins. The entity, after finishing off one planet, will move on to another in order to satisfy its appetite. Its last attack is on Melona IV in 2368.



▲ The beam cuts through the landscape of Melona IV, destroying anything in its path. The only defense for these **Federation** colonists is to flee. The entity works quickly, destroying a vast area in a matter of minutes.



▲ After the **Crystalline Entity** has passed over Melona IV, nothing is left on the planet's surface. All life forms, whether plant or animal, have been absorbed and the planet is rendered a barren wasteland, left to perhaps one day regenerate.



nothing in her work has enabled Starfleet to develop a means of tracking the Entity through space.

Studies show that the Entity seems to function like a giant electromagnetic collector. It needs a considerable amount of power to sustain itself, which it acquires by stripping every form of life from the worlds it encounters, and converting it to energy.

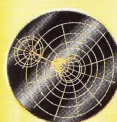
## Total destruction

When it attacks a planet, it enters the atmosphere and fires a wide energy beam at the surface. Everything in the path of the beam is destroyed. The resulting energy is then absorbed by the Entity. During an attack, the Entity creates considerable atmospheric disturbance. When the Entity attacks the colony on **Melona IV**, it takes a little less than 27 hours for it to completely strip the planet of life.

The Entity is extremely thorough. All biological life is destroyed, including vegetation and insects. Even bacteria are eradicated. The aftermath of the Entity's attacks are always the same, leaving residual bituminous matter in the soil. This is presumably a biproduct of the absorption process.

## No survivors

Until 2368, nobody survives an attack by the Crystalline Entity. However, in that year a group of colonists and



SPACE  
PHENOMENA

# The Guide to the STAR TREK Galaxy

FILE 5

CARD 7



SPACE  
PHENOMENA

## THE CRYSTALLINE ENTITY

*Enterprise* crew members take refuge in caves on Melona IV, as the Entity strips the planet of life. Other colonists on **Forlat III** had also tried to take shelter in caves, but without success. It seems highly likely that a combination of **kelbonite** and **fistrium**, refractory metals in the cave walls,

protect the Melona IV colonists from the Entity.

After this latest attack, Dr. Marr joins the *Enterprise* in an attempt to learn more about the Entity. Gamma scans of the planet's surface reveal that the Entity generates antiprotons.

The *Enterprise* adjusts her scanners and discovers

that the Crystalline Entity leaves a trail of antiprotons as it travels through space, and so can be tracked.

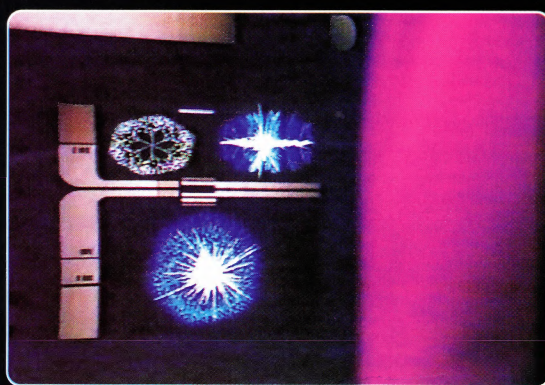
## Talking to the enemy

The Entity is at least partially sentient, and is capable of communication. In 2364, Lore is able to send a signal to the entity. It is unclear what kind of

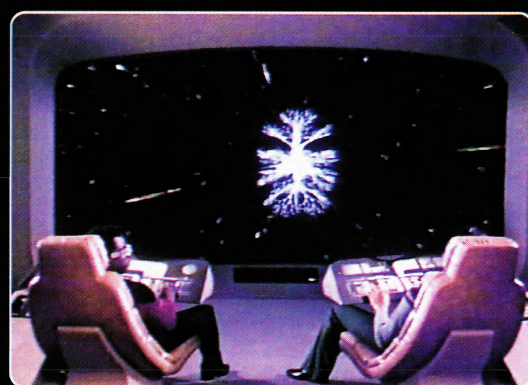
language it uses.

When the *Enterprise* intercepts the Entity in 2368, Commander Data and Dr. Marr attract it with a **graviton pulse**. Data modulates the pulse in an attempt to open communication, and the Entity responds by transmitting a pulse of its own. However, before the Entity's message can be translated, Dr. Marr initiates a sustained graviton beam that sets up a resonance effect within the Entity. This causes it to shatter, destroying it forever.

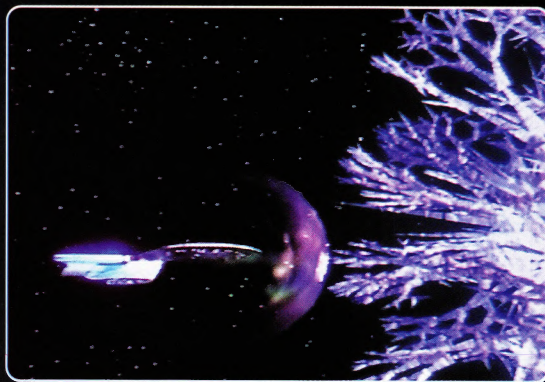
## ENCOUNTERS WITH THE ENTITY



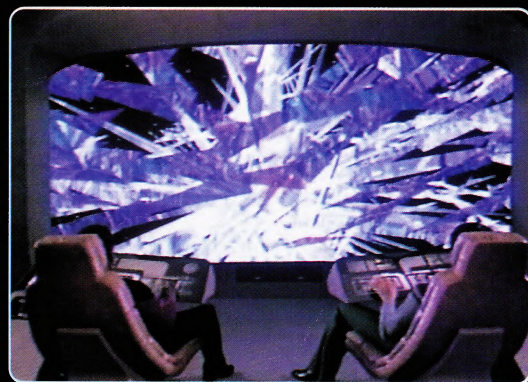
▲ The U.S.S. *ENTERPRISE*'s computer offers a graphic multi-perspective readout of the Entity as the crew learn more about its makeup.



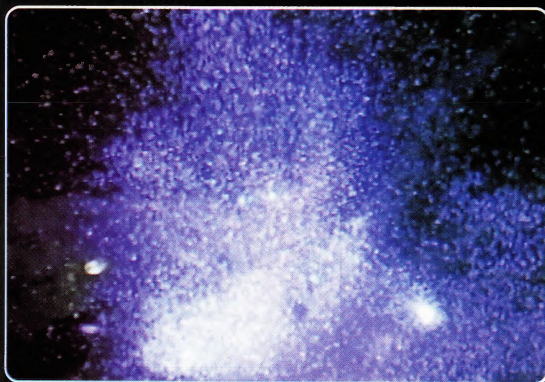
▲ The Entity has a crystalline structure, and is considerably larger than a starship. It can travel at warp speeds.



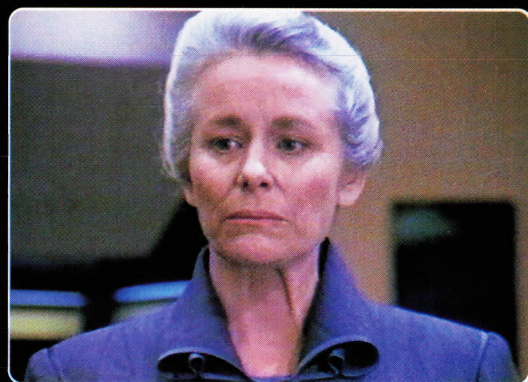
▲ The Entity is attracted to all biological forms of life, which it needs to absorb to sustain itself. However, it cannot penetrate a ship's shields.



▲ As a life form, the Entity is unique, and Federation records contain nothing similar. The learning opportunity is considerable.



▲ When Dr. Marr turns up the levels of a modulated graviton beam, she succeeds in her revenge on the creature that killed her son.



▲ Dr. Marr, although successful in the Entity's destruction, has ruined her own career for the sake of revenge.

## GALAXY FACTS

▲ Although the Crystalline Entity destroys all organic life on the Omicron Theta colony in 2336, its involvement is not uncovered for a further 18 years.

▲ Commander Riker's party on Melona IV are the only people to ever survive an encounter with the Crystalline Entity in its 12 attacks on planets.





CHARTING  
THE GALAXY

# The Guide to the STAR TREK Galaxy

FILE 3

CARD 2

## THE FOUR QUADRANTS



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The Milky Way Galaxy is divided into four quadrants: Alpha, Beta, Gamma and Delta. The Federation is mostly in the Alpha Quadrant, the *U.S.S. Voyager* is stranded in the Delta, the *Deep Space Nine* station is near a wormhole to the Gamma, and the Klingons and Romulans are in the Beta.

▶ **Wormholes are the only practical means of traveling across the Galaxy, but most of them are unstable. The only stable example that has been discovered so far is the Bajoran wormhole in the Denorios Belt. Its terminus is in the Gamma Quadrant.**



**O**ur galaxy is named the Milky Way Galaxy. It contains about a hundred billion stars, which are arranged in a disklike shape with a bulge at the center.

The Galaxy is almost 100,000 light years in diameter, and at its central bulge is about 10,000 light years across.

The center of our galaxy is believed to be several very dense clusters of stars. This extremely high density of star population means that starship navigation within these close-packed clusters is, while not impossible, extremely hazardous.

It is also theorized that the center of the galaxy contains a large, dangerous black hole commonly known as 'The Monster' to astrophysicists familiar with the region.

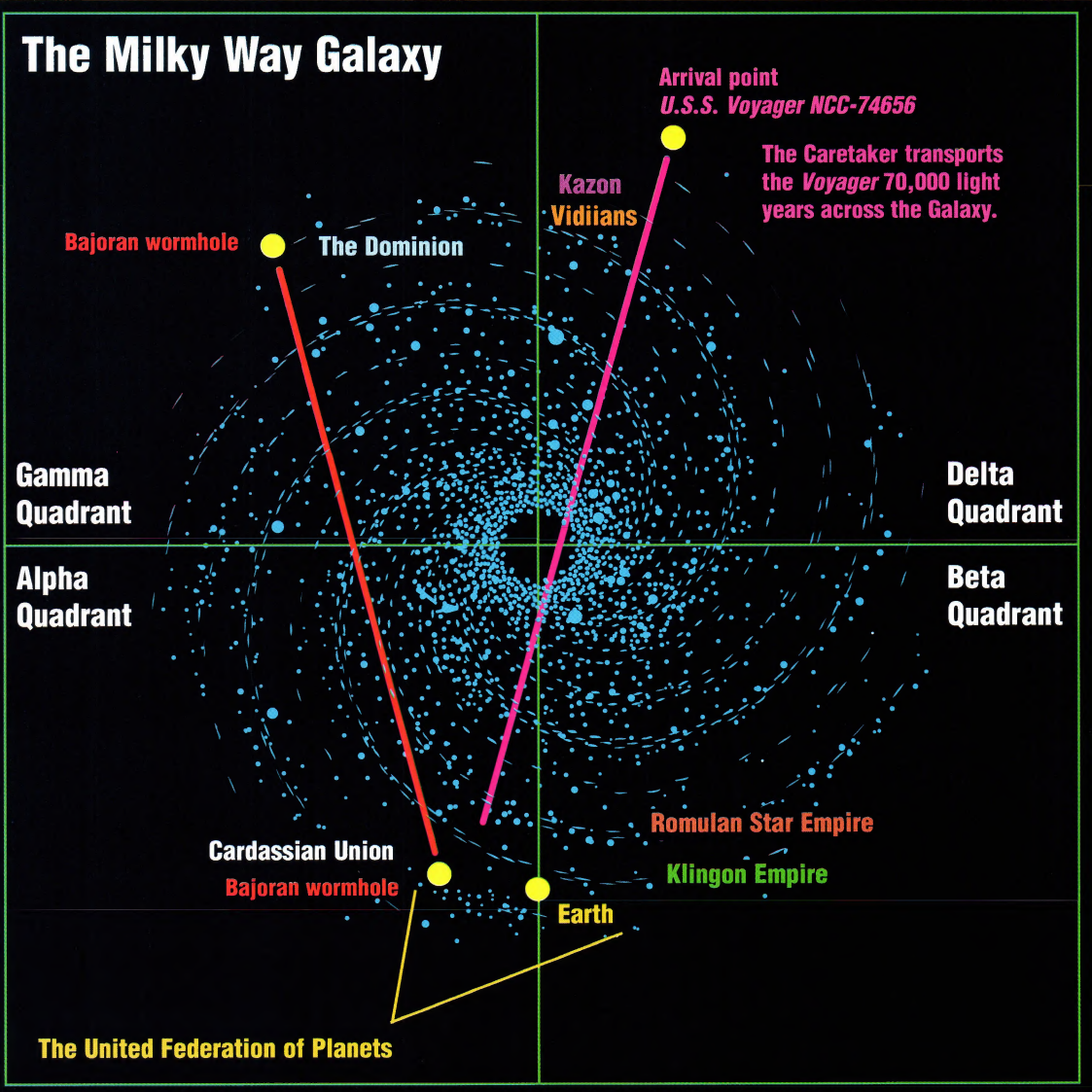
### The four quadrants

Because of the Galaxy's size, it has been divided into four major areas, each of equal size. These are called quadrants, and are slightly more manageable.

In interstellar mapping, a quadrant represents one-fourth of our Milky Way Galaxy. Each of the four quadrants forms a 90-degree pie wedge when seen from above or below the Galaxy's plane.

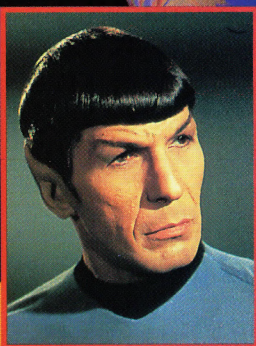
The four quadrants have been labeled **Alpha, Beta,**

### The Milky Way Galaxy



▶ **The Milky Way Galaxy has a diameter of 100,000 light years, and at its widest point it is 10,000 light years across. Even at high warp speeds, it is difficult to make journeys over these kinds of distances. It is only the discovery of the Bajoran wormhole that has allowed the Federation to visit the Gamma Quadrant.**





CHARTING  
THE GALAXY

# The Guide to the STAR TREK Galaxy

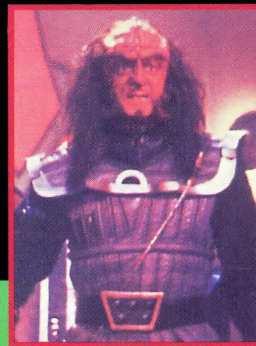
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## THE FOUR QUADRANTS



▶ The fierce Klingon Empire is a powerful force in the Beta Quadrant.

▶ The Vulcans helped form the United Federation of Planets in the Alpha Quadrant.

▶ Earth, the home of the human race, lies on the border of the Alpha and Beta quadrants.

### The Alpha Quadrant

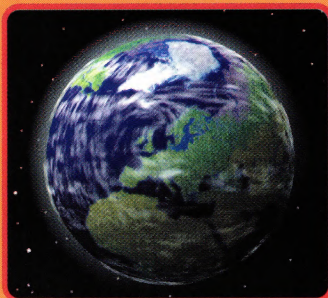
This quadrant is home to most of the worlds that belong to the **United Federation of Planets**, including Earth, which lies on the perimeter between the **Alpha** and **Beta** quadrants. Some of the Federation member worlds also reside within the **Beta** Quadrant.

Even though Federation space lies within this 'home' quadrant, galactic space is so vast that even most parts of Alpha Quadrant remain uncharted and unexplored by **Starfleet**.

The **Bajoran** space station **Deep Space Nine** is also located in the

**Alpha Quadrant**. The stable **Bajoran Wormhole** in the nearby **Denorios Belt** has a terminus in the **Gamma** Quadrant, and has given the Federation a gateway into that part of the Galaxy.

The **Alpha** Quadrant is also home to the **Cardassian Union**.



### The Beta Quadrant

Some parts of the **United Federation of Planets** fall within the **Beta Quadrant**. But Federation exploration of this part of space has been limited, because both the **Klingon** and **Romulan** empires are located in this quadrant. It is not known exactly how far the **Klingon** and **Romulan** empires extend, but it seems certain that the vast majority of the **Beta** Quadrant remains unexplored.

▶ A group of dissident Vulcans founded the **Romulan Star Empire** in the **Beta** Quadrant.



### The Delta Quadrant

Very little is known about this quadrant. Like the **Gamma** Quadrant, it is tens of thousands of light years from Federation space.

The **Borg Collective** homeworld is believed to lie in the **Delta** Quadrant.

The **Barzan Wormhole**, which had been believed to be stable, had one terminus in the **Delta** Quadrant, but that end-point was discovered to move unpredictably, and it could now be located anywhere in the Galaxy.

The starship **U.S.S. Voyager NCC-74656** was transported to the **Delta** Quadrant by the being known as **The Caretaker**. It is currently the only known Federation vessel to be traveling through that portion of the Galaxy.



▶ Starfleet believes that the **Borg** homeworld is located in the **Delta** Quadrant.



▶ The **Jem'Hadar** are the ruthless foot soldiers of the **Dominion**, which controls much of the space near the **Bajoran** wormhole's exit in the **Gamma** Quadrant.

### The Gamma Quadrant

This is the part of the Galaxy that is most remote from the **United Federation of Planets**, and at its closest point it lies 40,000 light years from Federation space. In 2369, a stable wormhole is discovered in the **Denorios Belt**, close to the planet **Bajor**. The **Bajoran Wormhole** provides an nearly instantaneous gateway into the **Gamma** Quadrant, eliminating what would normally be a 60-year journey at warp nine, and enabling exploration of that region of space.

The **Dominion** appears to control large areas of the **Gamma** Quadrant, and, because of the **Bajoran** wormhole, now poses a threat to the worlds of the **Alpha** Quadrant.

#### Gamma and Delta.

Each quadrant is incredibly huge: about eight billion cubic light years, containing hundreds of thousands of sectors.

#### Sectors

The sector is the primary unit of measurement in known space. Each sector is 20 light years across, and normally contains six to 10 star systems.

Sectors are officially referred to by a designated three- to six-digit number, for example Sector

3303, but some have been given common names in reference to their major star systems or planets. Earth is located in Sector 001, which is also known as the **Sol Sector**.

#### Vast distances

Most of space remains unexplored due to the tremendous distances across quadrants, and between star systems. It is estimated that traveling at a constant warp factor nine, a journey across the

Milky Way Galaxy in one plane would take 66 years. At that speed, it would take over seven years just to cross our own **Federation** space.

Without **Zefram Cochrane's** invention of **warp drive** in 2063, and faster-than-light travel, exploration of interstellar space could never have happened. Without warp capability, a spaceship at full impulse speed would take 400,000 years to travel the length of the Milky Way, and another eight million years to reach the nearest galaxy.

### GALAXY FACTS

▶ It will take the **U.S.S. Voyager** at least 70 years to return to the **Alpha** Quadrant. Assuming the ship has to stop to take on supplies and make repairs, the journey is more likely to take centuries.

▶ Several 'superbeings,' including **Q** and the **Caretaker**, seem capable of traveling across quadrants at will. It is not known how they accomplish this.





CHARTING  
THE GALAXY

# The Guide to the STAR TREK Galaxy

FILE 3

CARD 3A



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THE GALAXY

## ALPHA QUADRANT

### ALDEBARON

CLASS-M PLANET

**V**ery little is known about **Aldebaron**. **Dr. Elizabeth Dehner** is stationed here before being picked up for her next assignment to serve aboard the original *Starship Enterprise* during **Captain James T. Kirk's** first five-year mission in command. Dehner's brief is to study crew reactions under the duress of emergency situations. Her assignment is short-lived as she later perishes on the planet **Delta Vega**, along with **Gary Mitchell**, in 2265.



**Dr. Dehner, along with fellow crewman Gary Mitchell, perishes in the line of duty on planet Delta Vega.**

### ALPHA CENTAURI

CLASS-M PLANET

**A**lpha Centauri, a tri-star system, is the nearest star system to Earth at 4.34 light years. Several planets, some Class-M, are within this system.

In 2267, **Zefram Cochrane** informs **Captain Kirk**, **Mr. Spock** and **Dr. McCoy** that he is from

this system, presumably moving there from Earth after he invents warp drive in 2063. Kirk also jokingly refers to Alpha Centauri as being a beautiful place when speaking to **Colonel Fellini** back on Earth in 1969 after an accident sends the *U.S.S. Enterprise* back in time.

**He should be over 200 years old, but a youthful Zefram Cochrane, courtesy of his 'Companion', appears to be thriving on a planetoid. Cochrane disappears from Alpha Centauri in 2117 after breaking the warp speed barrier from Earth in 2063.**



### ALPHA CYGNUS IX

CLASS-M PLANET



**D**istinguished **Vulcan**, **Federation** Ambassador and **Spock's** father, **Sarek** successfully establishes a treaty with **Alpha Cygnus IX**. Sarek would be responsible for many similar treaties on various planets in his lifetime. His death on the Vulcan homeworld from **Bendii Syndrome** in 2368 robs the Federation of one of its most skillful negotiators.

**Although Sarek was a man of many diplomatic gifts, he was unable to establish relations with his own son, Spock, for 18 years. Even after the two are reconciled, Sarek remains more a successful diplomat than a family man.**

### ALPHA III

CLASS: UNKNOWN

**T**his is the planet on which the **Statutes of Alpha III**, important documents regarding an individual's civil liberties, originate. These are cited in **Captain Kirk's** court-martial of 2267 by his defending attorney **Samuel T. Cogley**.

**Captain Kirk faces a potentially career-ending court-martial for the death of crewman Ben Finney. His attorney, Samuel T. Cogley, is well versed in arcane aspects of interplanetary law and cites the Statutes of Alpha III which give a defendant the right to face his or her accuser.**



### ALPHA MAJORIS I

CLASS: UNKNOWN

**A** creature with unusual properties, the **mellitius** originates from **Alpha Majoris I**. The mellitius, in a state of motion, is gaseous. At rest, the creature becomes solid. The mellitius is quoted as reference in a hearing aboard the *U.S.S. Enterprise* in 2267 when **Lieutenant Commander**

**Montgomery Scott** is accused of murdering several women on **Rigel IV**.

Scott is later found innocent when **Redjac**, an evil life form that feeds on the fears of others, is found to be responsible for a series of murders on various planets in the galaxy over the last several hundred years.





CHARTING  
THE GALAXY

# The Guide to the STAR TREK Galaxy

FILE 3

CARD 3A

## ALPHA QUADRANT



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THE GALAXY

### ALPHA PROXIMA II

CLASS-M PLANET

**A**lpha Proxima II is quoted in the hearing aboard the *Starship Enterprise* regarding the deaths of several women on **Rigel IV** in 2267. Several women on Alpha Proxima II are murdered in a similar fashion to victims of Jack the Ripper on Earth in the 19th century and later on Rigel IV and Deneb II. **Montgomery Scott**, Chief Engineer of the *Starship Enterprise*, is initially accused of the murders, but is later cleared of all charges when **Redjac** is exposed as the timeless perpetrator. The entity feeds on the fear of its victims. Little is known, however, about the planet itself.

### ALTAIR IV

CLASS-M PLANET

**A** Federation Class-M planet, **Altair IV** is the location of the distinguished **Dr. Henri Roget's** work at the Central Hospital. His pioneering work earns him the coveted **Carrington Award** in 2371.

### ALTAIR VI

CLASS-M PLANET

**T**he *U.S.S. Enterprise* is en route to planet **Altair VI** in 2267 to serve an ambassadorial function as honor guard before being redirected to planet **Vulcan**. Altair VI, after a protracted interplanetary war, had finally come to a peaceful settlement and the *Enterprise* crew was to attend the inauguration of their

**The needs of the one outweigh the needs of the many – at least in Mr. Spock's case, when Captain James T. Kirk diverts from an important diplomatic function in order to save his first officer's life and head to the Vulcan homeworld.**

new president. However, **Mr. Spock**, in the throes of the **Pon Farr** mating urge, is deathly ill and may perish unless he is returned to his homeworld. **Kirk** decides the life of his friend is a more pressing matter and puts the trip to Altair VI on hold.

At **Starfleet Academy** in 2285, **Lieutenant Saavik** undergoes a **Kobayashi Maru** ('no win scenario') testing simulation. The planet of Altair VI is used as a setting for a nearby fictitious ship which is damaged and in need of rescue.

Commander William Riker is



### ALTAIR III

CLASS-M PLANET

**T**hird planet in the **Altair** star system. **Commander William T. Riker**, prior to his assignment aboard the *U.S.S. Enterprise*, invokes his executive officer's duty and insists that his captain aboard the *U.S.S. Hood, DeSoto*, remain on board the ship rather than risk his life on the planet surface of Altair III. The assignment, in Riker's opinion, represents too great a risk.

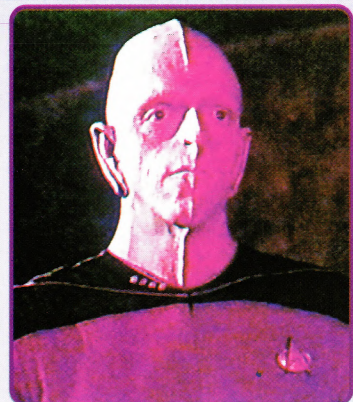
**Commander William T. Riker, serving under Captain DeSoto on the U.S.S. HOOD, argues that it is unsuitable for his captain to beam down to Altair III. Fortunately, the incident does not earn DeSoto's wrath and he still speaks highly of his former first officer.**



**Captain Rixx, of the THOMAS PAINE, originally meets Captain Picard at an Altairian conference. This makes him more comfortable when he and two other officers inform Picard of a suspected alien infiltration of Starfleet in 2364.**

told he has contracted **Altairian encephalitis** in a disorientating and fictional virtual reality created by a powerful alien being named **Barash** in 2367. Barash tries to convince Riker that the encephalitis is the reason for his memory loss.

An Altairian conference is the venue where **Captain Jean-Luc Picard** first meets **Captain Rixx**, a **Bolian**. Captain Rixx later tries to warn Picard of a conspiracy of mysterious aliens threatening the



very structure of Starfleet in 2364.

Altair water, a drink favored by **Dr. Leonard McCoy**, is believed to originate from the Altair star system.

### ALTEC

CLASS-M PLANET

**T**he planet **Altec** is joined by neighboring planet **Straleb** in the **Coalition of Madena**. The two planets, although at peace, are stretched to the breaking point when it is revealed that two young lovers, **Yanar** from Altec and **Benzan** of Straleb, use a charming rogue trader, **Thaduin Okona**, in a ruse to hide their planned nuptials. When their plan is finally revealed by Okona, the two planets once again find peace.



**A charming and outrageous spacefaring rogue, Thaduin Okona is just the type of person on whom others can lay blame.**





## STARFLEET ACADEMY

## SHIP HANDLING

# VOYAGER LANDING PROCEDURE

Unlike many Federation starships, the **Intrepid-class U.S.S. Voyager NCC-74656** has the capability to land on a planet's surface. Such landings are not intended to be routine; like other **Starfleet** vessels, **Intrepid-class** ships are equipped with transporters and shuttlecraft. The landing maneuver is only used in extreme circumstances, normally when some form of interference prevents the safe use of transporters or if, for some reason, the entire crew must leave the ship.



**The U.S.S. VOYAGER makes its first landing on the surface of a planet, after the crew find an ancient Earth vehicle floating in space.**

## STARSHIP FACTS

The **U.S.S. Voyager** first lands on a planet in 2372, although the procedure has previously been tested on the **U.S.S. Intrepid**.

The **U.S.S. Voyager** makes two successful touchdowns during 2372. The first landing is made when trinitimic interference prevents the crew transporting down to a Class-L planet. The second landing is made when a group of **Kazon** capture the ship and force the crew to disembark.

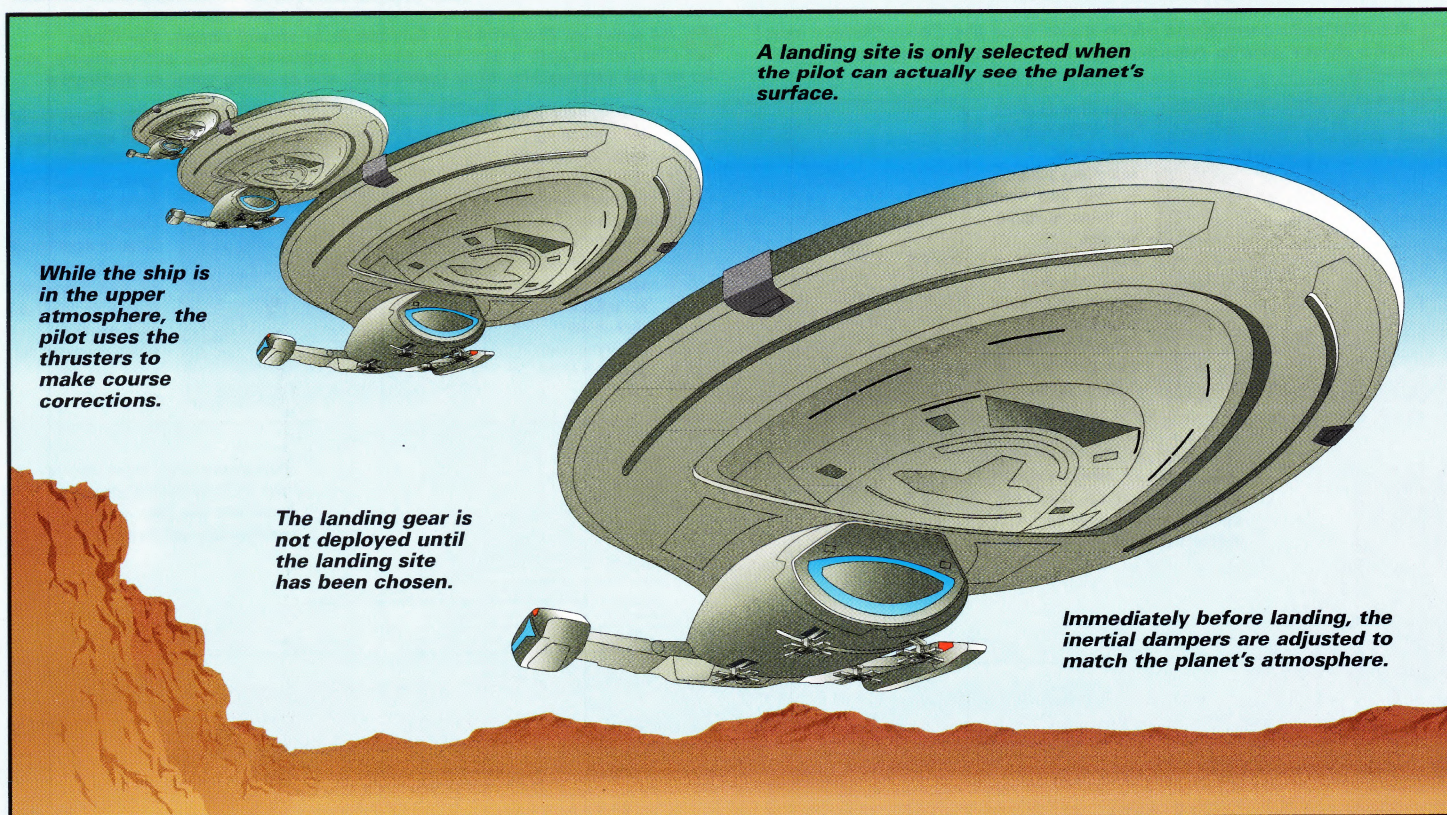
Because starships rarely need to land, few pilots have ever performed the landing procedure. It is, however, taught at **Starfleet Academy** using **holodeck** simulations. Given reasonable atmospheric conditions, the landing procedure is relatively straightforward. During landing and take-off, the ship goes to Condition Blue, the warp core is taken offline, and the inertial dampers and structural integrity field are set to maximum. The pilot then plots a standard glide trajectory to take the ship down to the planet's surface. Minor course corrections may be necessary, and the inertial dampers will have to be adjusted to match the planet's atmosphere.

## LANDING PROCEDURES: ENGINEERING

- The Chief Engineer takes the warp core offline, and vents all plasma from the nacelles.
- Engineering is assigned to stand by to engage atmospheric thrusters.

## LANDING PROCEDURES: BRIDGE

- All decks go to Blue Alert.
- The pilot places atmospheric controls at standby, brings landing mechanisms online, and sets inertial dampers at maximum.
- The starship enters the atmosphere on a standard glide-trajectory.
- The Ops Officer is in charge of maintaining environmental controls and monitoring EM discharges.
- A landing site is chosen.
- Landing struts are extended, inertial dampers are released, and the structural integrity field is adjusted to match the planet's gravity.
- The landing struts are put down and locked into position as the ship settles down on the planet.



**INTREPID-CLASS** ships like the **U.S.S. VOYAGER NCC-74656** are among the few large **Starfleet** vessels that are capable of entering a planet's atmosphere and landing. The procedure is rarely used, because the crew can normally transport down to the planet's surface.



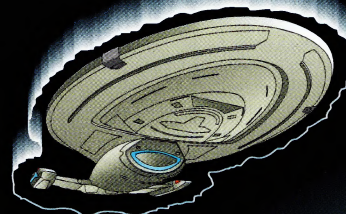


## VOYAGER LANDING PROCEDURE

Before landing, the warp core is taken offline and the plasma is vented from the nacelles. Engineering is now put on standby.



The Conn Officer places atmospheric controls at standby, brings landing mechanisms online, and sets inertial dampers to maximum.

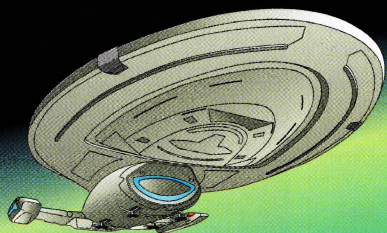


The Conn Officer takes the ship into the planet's atmosphere on a standard glide trajectory.

- 1** Poor atmospheric conditions and various types of interference can prevent the safe use of transporters or shuttles. In this situation, the decision may be taken to land the ship.

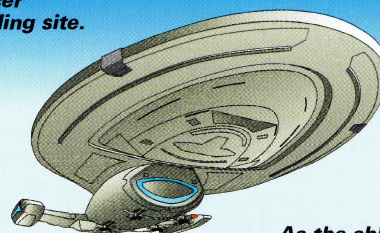
- 2** The ship is now at Condition Blue and ready to enter the planet's upper atmosphere. As it does so, the inertial dampers and the structural integrity field prevent it from breaking up.

During the descent, the Conn Officer makes course adjustments to compensate for turbulence.



The Ops Officer monitors the ship for EM discharges. If necessary, he or she will re-route the ODN conduit.

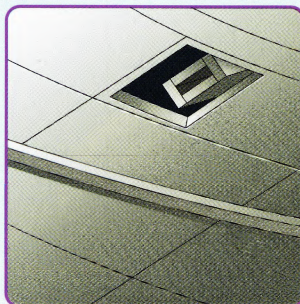
Once the ship has passed through the upper atmosphere and the ground is visible, the Conn Officer chooses a landing site.



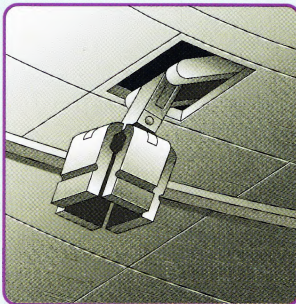
As the ship approaches the landing site, the Conn Officer lowers the landing gear.

- 3** Atmospheric conditions often mean that the Conn Officer must make minor course adjustments to maintain the standard glide trajectory.

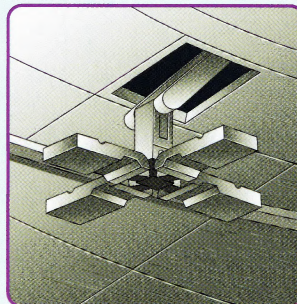
- 4** As soon as the planet's surface is in visual range, the Conn Officer selects a landing site and adjusts course accordingly. As he or she begins the final approach, the landing gear is deployed.



- 5** The U.S.S. VOYAGER has four landing struts which are on the underside of the engineering hull. As the Conn Officer deploys the landing gear, the doors slide open.



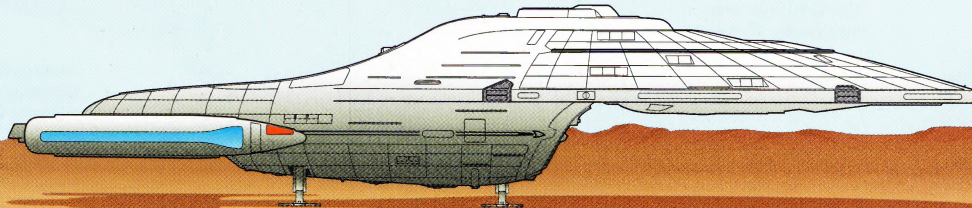
- 6** When the landing gear is inside the ship, it is folded to take up the minimum amount of space. It starts to open out as the ship approaches the landing site.



- 7** Once fully extended, the landing gear is locked into place. Even though ship's systems absorb most of the impact, there is still a jolt as the ship comes to rest on the surface.

As soon as the ship is on the ground, the engines are disengaged and the thruster exhaust is secured.

The crew can now leave the VOYAGER through hatches on the underside of the ship.



- 8** Immediately before landing, the ship's structural integrity field is adjusted to match the planet's gravity. When the ship comes to rest on the planet's surface, the engines are disengaged and the thruster exhaust is secured. Once this is done, the landing procedure is finished and the crew can leave the ship.





# Bajoran Solar Sailing Ship

For hundreds of years the Bajorans travel through space in *solar sailing ships*, but the details of their journeys are lost — until Commander Sisko decides to build a replica of one of these ancient vessels, and take to the stars.

**T**he *Bajoran solar sailing ship* is a small and relatively simple craft. It has no engines whatsoever, and relies entirely on solar winds to propel it through space.

Legends say that the Bajorans used these *solar sailing ships* to explore their sector of the Galaxy 800 years ago, before human beings had even invented the combustion engine. Some stories say that *solar sailing ships* managed interstellar journeys, traveling as far as **Cardassia**. However, even though these vessels seem to have remained in use for over four hundred years, at some point details of their journeys became lost, and to modern eyes the *solar sailor* seems barely spaceworthy.

## Reconstruction

Plans for the *solar sailing ships* survive in the **Bajoran central archives**, along with star charts that show the paths of the solar winds. In 2371, **Commander Sisko** decides to build an exact replica of the craft using only the same technologies that would have been available to the ancient Bajorans. Timber is brought to his workshop on the station, where he makes the ship by hand. Over the next few weeks, he painstakingly recreates the vessel in exact detail, determined to discover if the design is spaceworthy. Sisko's only compromise in the construction is the installation of a **gravity net**.

After looking at the designs, **Deep Space Nine's** Chief of Operations, **Miles O'Brien**, believes that the ship is not capable of making serious journeys through space. The construction is flimsy, and the vessel is so small that it could not carry enough atmosphere or supplies to make the interstellar journey to Cardassia. This position is supported by the **Cardassians**, who claim to have no record of Bajoran visitors.

## Sailing the stars

Nevertheless, Sisko thinks that there may be more to the tiny vessel than meets the eye. He decides to take his ship to the **Denorios Belt**. The trip is relatively short, but he believes that a successful voyage will go a long way toward proving the claims made for the *solar sailors*.

The sails of the craft are arranged in a butterfly wing pattern, and controlled by manually-cranked winches. With the wings folded, the vessel resembles a giant moth. But, with the huge, graceful wings unfurled, the ship transforms into a beautiful golden butterfly.

The living area inside the ship is small and functional. The original crew slept in zero-grav hammocks, used a kind of sextant to navigate, and probably survived on basic rations.

During the journey it appears that the fragile construction will prove fatal: solar winds snap off the port mainsail, and then the jib. However, even after jettisoning a sail, the ship is capable of continuing on its voyage.

## Light speed

An extraordinary discovery is made when the ship is caught in a tachyon eddy. The light construction and the large surface area of the wings mean that the tachyons accelerate the ship to warp, enabling it to make an interstellar journey in a matter of minutes.

Sisko's ship comes to rest near Cardassia, confirming the reports in the ancient stories. It becomes apparent that markings on Sisko's star charts show the paths of various different **tachyon eddies**, the equivalent of 'trade winds.'

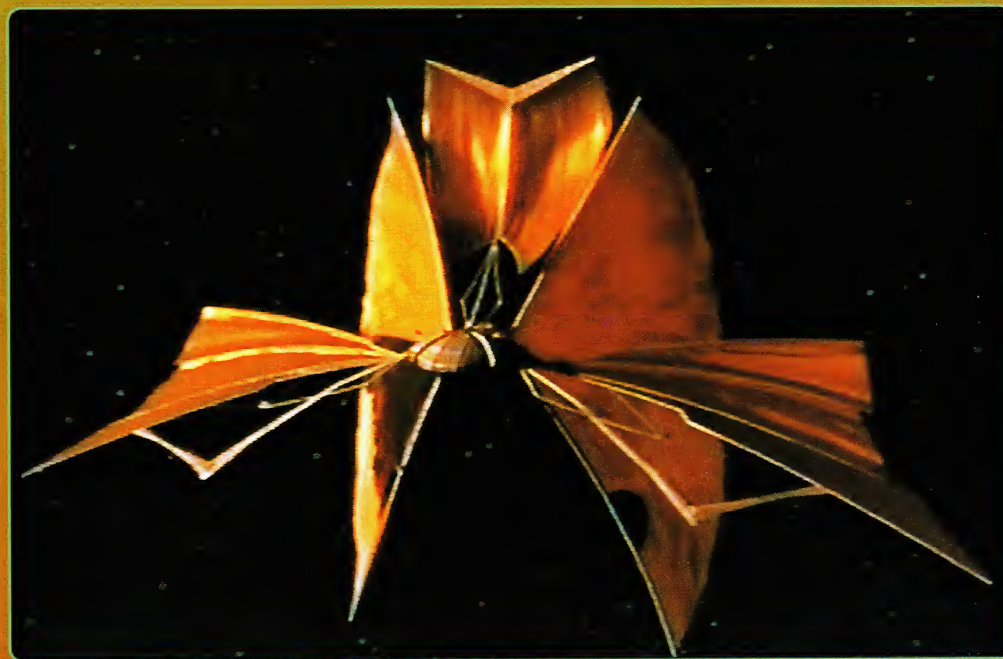
Faced with the evidence of Sisko's successful journey, the Cardassians uncover a crash site, proving that the Bajorans had indeed reached the **Cardassian homeworld**.



▶ **Commander Sisko reconstructs his ship from plans he recovers from the Bajoran archives. The archives also contain the star charts that he uses to navigate.**



▶ **Mass is a vital consideration on the SOLAR SAILING SHIP. The living quarters are sparse and the ship doesn't carry any more equipment or machinery than is absolutely necessary. The sails are operated by hand winches, and hand-held tools are used to navigate.**



▶ **As soon as Sisko unfurls the sails, they catch the solar winds and propel the ship away from DEEP SPACE NINE. The flight is a huge contrast to conventional spaceflight, which relies upon enormously powerful engines.**





# Doctor McCoy: The Healer

In 27 years of service aboard the *U.S.S. Enterprise NCC-1701* and her successor the *U.S.S. Enterprise NCC-1701-A*, Dr. Leonard H. McCoy shows himself to be an extraordinarily talented and inventive ship's doctor.

**A**lthough he claims to be little more than a country doctor, **Leonard McCoy** proves to be one of the greatest ship's physicians in the history of **Starfleet**.

## Mysterious diseases

Shortly after he joins the *U.S.S. Enterprise NCC-1701* in 2266, the ship's crew starts to act strangely. They lose their inhibitions and begin to behave erratically. McCoy discovers that they are being effected by a virus that alters their blood chemistry, making them act as if they are drunk. Even though affected himself, McCoy develops a cure in time to save the ship.

Later the same year, McCoy is part of an away

team that is infected with a mysterious disease. He quarantines the landing party, and, working without proper access to the ship's medical facilities, determines that the planet's population has been affected by a disease that prolongs childhood for hundreds of years, but causes death to adults. Using himself as a guinea pig, he develops an antitoxin that saves the lives of everyone left on the planet.

The following year, members of the *Enterprise* crew, including McCoy, are infected with a hyperaging disease. McCoy discovers that the effects of the disease, which is caused by an unusual form of radiation, can be reversed with adrenaline, an old fashioned treatment for radiation sickness.

## McCoy IN SICKBAY

### Pioneering work

**Working in the U.S.S. ENTERPRISE's sickbay, Dr. McCoy has developed cures for countless new diseases. Much of his work in deep space has been revolutionary, as McCoy has developed cures for unknown viruses and treated strange new life forms.**

### Vulcan transfusion

**McCoy has had many important patients, among them the Vulcan ambassador Sarek. Without the operation performed by McCoy during the Babel conference, Sarek would have died.**

## PROFILE ON DOCTOR MCCOY

**NAME:** Leonard H. McCoy, MD

**LIFE FORM:** Human male

**BORN:** 2227

**ASSIGNED TO ENTERPRISE:** 2266

**OCCUPATION:** Ship's doctor aboard the *U.S.S. Enterprise NCC-1701* and *U.S.S. Enterprise NCC-1701-A*

**MAJOR ACHIEVEMENTS:** First Federation doctor to treat silicon-based life form, and to perform a brain transfer. Develops a cure for Psi-2000 virus and treatment for hyperaging condition. Saves the life of Sarek of Vulcan.



**▲ Dr. McCoy spends more than two and a half decades of his illustrious medical career serving aboard various incarnations of the U.S.S. ENTERPRISE. In this time he encounters many new and strange diseases.**



### Bizarre parasite

**Dr. McCoy does far more than treat injuries to the crew. In 2267, his analysis of the Denevan neural parasites shows that they are vulnerable to ultraviolet radiation. This discovery is instrumental in saving the lives of millions, not to mention the ENTERPRISE's science officer, Mr. Spock.**





# Bajoran Solar Sailing Ship

With wings that catch the solar waves, the *Bajoran solar sailor* is one of the simplest and most elegant ships ever to travel the stars.

## AFT VIEW

The ship can be steered by adjusting the position of the wings. Charts show the route taken by the solar winds.

The wings are controlled by hand winches inside the living quarters. The supports may be damaged by strong solar currents or tachyon eddies.

The ship only has small living quarters. Because it relies on solar waves for propulsion it has no impulse or warp engines.

The wings of the ship catch the solar winds to propel the tiny vessel. If the ship enters a tachyon stream it is accelerated to warp speed.

## BAJORAN SOLAR SAILING SHIP

Type: Solar sailing ship

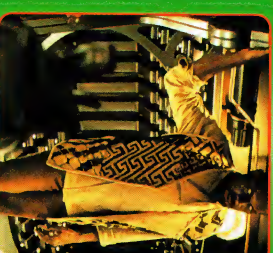
Crew: One or more

Propulsion: Solar winds and tachyon eddies

Features: The ship is light enough to ride tachyon streams at warp speed

Firepower: None

Ben Sisko builds his ship with great attention to detail, taking care to only use tools that would have been available to the ancient Bajorans.



The maps that Commander Sisko finds in the Bajoran archives show the paths taken by the solar winds.

The SOLAR SAILING SHIP has no electronic navigational systems. Instead the crew must rely on a sextant-like tool that can be used to calculate the ship's position.



As Commander Sisko's replica SOLAR SAILING SHIP moves through space it is almost silent. This is a marked contrast to the regular hum that a starship produces.





## FILE 43 STARFLEET PERSONNEL

# Ensign Ro Laren

When Captain Picard takes the rebellious, bitter Ensign Ro under his leadership, will she conform to Starfleet expectations and become a model officer, or will she ultimately revolt?

When she is first assigned to the **U.S.S. Enterprise NCC-1701-D** in 2368, Ro Laren has already had a less than conventional Starfleet career. Her previous assignment, to the **U.S.S. Wellington NCC-28473**, ends in a court-martial. Ro is accused of disobeying orders on an away team mission, causing the death of eight officers. At the hearing, she refuses to speak in her defense. The court has no alternative but to find her guilty, and to sentence her to imprisonment in the stockade on **Jaros II**. Rumors persist that the full facts of the case are not known.

In 2368, **Admiral Kennelly** releases Ro from prison and returns her to active duty. She is assigned to the **U.S.S. Enterprise** as a mission specialist. **Captain Jean-Luc Picard** objects to her posting, but is overruled by Admiral Kennelly, who has reasons of his own for assigning Ro to the ship.

## Hidden agenda

The *Enterprise's* mission is to dissuade a group of **Bajoran** terrorists from making attacks on **Federation** colonies. However, Kennelly is acting with the **Cardassians** to flush the Bajorans into the open, where the Cardassians intend to kill them. Kennelly hopes to

## RO AND THE ENTERPRISE

### ★ Difficult arrival

When Ro first comes aboard the **U.S.S. ENTERPRISE** she brings her reputation with her. She has been court-martialed for refusing to obey orders, and has little desire to stay in Starfleet.



### ★ Huge potential

Although he originally objects to Ensign Ro's assignment to the **U.S.S. ENTERPRISE**, Picard comes to realize that she is an impressive officer who will be a credit to his crew.

### ★ Conn Officer

Ro is assigned to the bridge, where she is an efficient Conn Officer. Under Picard's guidance, she reestablishes her reputation and is promoted to Lieutenant.



## PROFILE ON RO LAREN

**NAME:** Ro Laren

**LIFE FORM:** Bajoran female

**STATUS:** Member of the Maquis

**GRADUATES STARFLEET ACADEMY:** 2364

**ASSIGNMENTS:** **U.S.S. Wellington NCC-28473**, **U.S.S. Enterprise NCC-1701-D**

**SPECIALIST TRAINING:** One year course at Starfleet Tactical

**REMARKS:** Ensign Ro Laren is court-martialed after an incident on Garon II. She is imprisoned in the Starfleet stockade on Jaros II, before being reinstated to Starfleet as a mission specialist. She is permanently assigned to the *Enterprise* at Captain Picard's personal request.

**FIRST SEEN:** 'Ensign Ro'



▲ For many years, Ro Laren is an exceptional, if strong-minded, Starfleet officer. However, she must always struggle with her loyalty to the Bajoran cause.



## OTHER CARDS IN THIS FILE...

39A RO LAREN'S BAJORAN HERITAGE  
39B RO LAREN AND CAPTAIN PICARD

## SEE OTHER FILES

THE BAJORANS.....File 10  
THE MAQUIS.....File 18  
BAJORAN PERSONNEL.....File 47  
STAR TREK:  
THE NEXT GENERATION.....File 68



# Ensign Ro Laren

use Ro's freedom as a means of persuading her to help him.

Ro knows little about the Admiral's plan, but during the course of the mission she becomes suspicious, and tells Picard about everything that has happened. Ro and Picard form a plan which exposes Kennelly. At the end of the mission, Picard, who is impressed with Ro's performance, persuades her to join the *Enterprise* crew. He tells her that he believes she has the potential to become one of the best officers he has ever served with. Ro accepts and is posted to the bridge at the conn position.

## Onboard relationships

Picard's support provides a vital turning point in Ensign Ro's career. With her assignment to the *Enterprise* she is restored to a position of trust, and after only a year, Picard recommends her for a highly coveted post on a one-year course at **Starfleet Tactical**, where she earns promotion to Lieutenant.

Ro also has the friendship of **Guinan**, the *Enterprise's* bartender, who recognizes the unconventional Bajoran's potential, and is instrumental in persuading Picard to give her a second chance.

Her relationships with other crew members are not quite so easy. **Commander Riker** initially finds her attitude abrasive, but when the *Enterprise* crew finds their memories effected by a **Satarran** weapon, the two officers discover a suppressed attraction.

Ro comes into conflict with **Counselor Troi** when the

*Enterprise* is severely damaged after colliding with a **quantum filament**. The accident leaves Ro, Troi, and **Chief Miles O'Brien** on the bridge. Although Ro has far more command experience than Troi, the counselor outranks her, and takes command of the saucer section. As the ship is in grave danger of a core breach, Ro suggests they should perform a saucer separation to save at least some of the crew. Troi overrules her and, against the odds, the crew are able to save the ship. Ro offers the counselor a reluctant apology, but their relationship doesn't seem to suffer.

## Extraordinary events

During her time on the *Enterprise*, Ro undergoes two very unusual transformations. In 2368, she and Chief Engineer **Geordi La Forge** are exposed to a **Romulan** cloaking device that suspends them in **interspace**, rendering them invisible and allowing them to pass through solid objects. At first, Ro believes that they are dead, but the two officers eventually discover what has happened, and after an encounter with a similarly effected Romulan, exposure to an **anionic beam** restores them to normal space.

The following year, Ro is part of an away team that is exposed to a

## STRANGE EXPERIENCES

### ★ Out of phase

After exposure to an experimental Romulan interphase generator, Ro is placed in a cloaked state that allows her to pass through solid objects.



### ★ Second childhood

In 2369, Ensign Ro is one of a group of *ENTERPRISE* personnel who are reduced to childhood by an energy field. Thankfully, she is later restored to adulthood.

strange energy field that reduces them to childhood. Ro finds the experience unpleasant. Eventually, Chief O'Brien finds a way of reversing the effects of the field using the ship's transporters.

After her return to the *Enterprise* from Starfleet Tactical in 2370, **Admiral Necheyev** assigns Lieutenant Ro to infiltrate the **Maquis**. Ro makes use of

her troubled background to win the trust of the Maquis, but in the course of the mission she comes to feel, like many other Starfleet officers, that Starfleet's attitude to the Maquis is unreasonable.

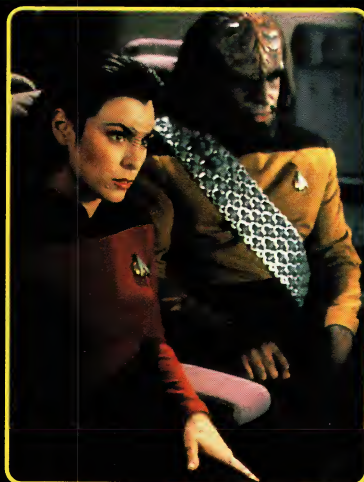
## Proud of her roots

Ro has always been proud of her Bajoran heritage, and feels that she cannot betray the Maquis. Reluctantly, she tells the Maquis about the trap she is supposed to lure them into, and leaves Starfleet. Her greatest regret is disappointing Captain Picard.

*"I've always thought Starfleet could learn a lot from me, Captain."*

— Ro Laren to Captain Picard

## VALUED OFFICER



### ★ Outspoken

From the very beginning it is clear that Ro is a strong-minded officer. In briefings she has a distinct voice, and is not afraid to contradict senior officers if she feels they are mistaken.



### ★ Many talents

Ro becomes an essential part of the *ENTERPRISE* crew. She is assigned to the command division, and it emerges that she has a special aptitude for tactics. When aliens possess the bodies of an *ENTERPRISE* away team, Ro and Geordi La Forge implement a plan to render them unconscious using anesthetine gas.



### ★ Command material

Although they get off to a bad start, Ensign Ro and Commander Riker have much in common. As time progresses, it becomes clear that there is even an underlying attraction between them.



# PADDs: Design and Operation

Among the complex computer systems aboard any starship, the handiest and most practical facet for most crew members is the appropriately-named PADD.

**T**he development and evolution of the **Personal Access and Display Device** has been one of the greatest spurs to the independence of crew members' ease of work and functionality in their shipboard tasks. It has freed **Starfleet** personnel from mounted computer interfaces and terminals, and made it easier for them to communicate and transfer information.

The **PADD** is extremely powerful and, if properly configured for conn interface, it could even be used to fly the entire starship from any location from crew quarters to a corridor – if memory and display limits were no problem. This ability reflects the Starfleet design goal of making handheld devices able to access any file or program in line with the user's security clearance.

## Construction

The standard PADD design features a basic three-layered construction of imbedded circuit-composite materials that are no

*The PADD is a versatile computer device that allows Starfleet personnel to work anywhere that suits them. It has a limited memory, but can easily be connected to a ship's main computers, accessing all the information that is stored there.*

PADDs are typically used for working away from a computer station. They allow the user complete mobility, and are often used for working in crew quarters or off-duty areas such as Ten-Forward.

*PADDs are custom made to serve various different functions. As a result, individual controls will vary from PADD to PADD.*

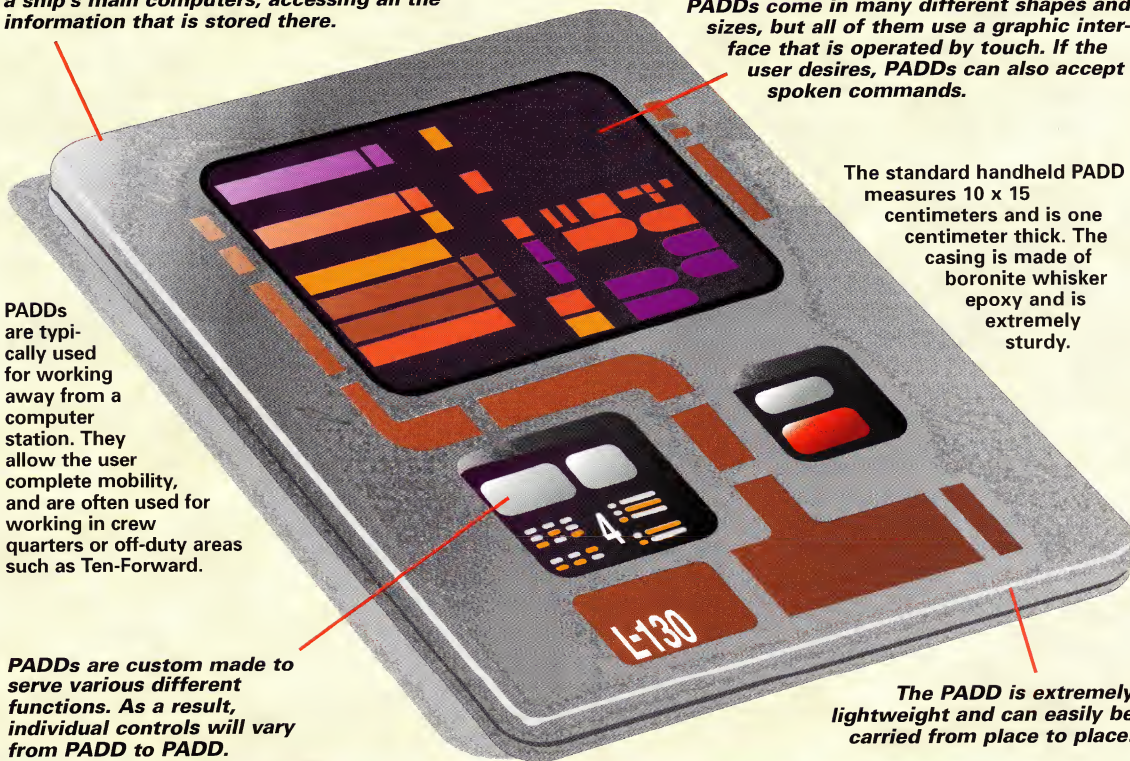
PADDs come in many different shapes and sizes, but all of them use a graphic interface that is operated by touch. If the user desires, PADDs can also accept spoken commands.

The standard handheld PADD measures 10 x 15 centimeters and is one centimeter thick. The casing is made of boronite whisker epoxy and is extremely sturdy.

The PADD is extremely lightweight and can easily be carried from place to place.



▲ PADDs vary in size. Many can easily be carried in the palm of your hand. Even the larger PADDs are light and portable.



▲ One of the major advantages of PADDs is that they can be taken anywhere. This allows Starfleet officers to work in any environment they choose. On the U.S.S. ENTERPRISE NCC-1701-D, Commander Riker and Counselor Troi often take advantage of this to perform personnel reviews in Ten-Forward.



▲ PADDs are often customized to meet the specific needs of the different ship's departments, such as medical. Even sophisticated devices such as the EMH make use of PADDs to provide computer access.



▲ PADDs are often used in conjunction with larger computer terminals. They allow personnel to access complicated information while moving about the ship without having to reroute the terminal they are working at. They also allow information from various sources to be compared easily.





## PADDs: Design and operation



more than 1 cm thick in total. A casing of boronite whisker epoxy carries the primary electronics bonded on, including the multi-layer display screen; it provides protection even when dropped from a height of up to 35 meters.

### Components

The PADD includes three replaceable elements: the **isolinear memory chip**, **subspace transceiver array (STA)**, and **sarium power loop**.

The fully-charged sarium cell provides 16 hours of operation and is normally induction recharged when off-duty. When near exhaustion, it automatically flags the main computer to transfer its

task to a working unit.

Memory capacity of the isolinear chip is 4.3 kiloquads. Like the tricorder, the PADD can dump its memory to a main computer in less than one second.

Finally, the STA allows a data link between the PADD and the ship's computers over the same range as a communicator. This means that away teams can use PADDs which can also provide a transporter lock-on signal.

PADDs can also share computing functions and data transmissions with any other **Starfleet** device employing com protocols as used for STA devices. As with the communicator, such

transmissions are secured by encryption.

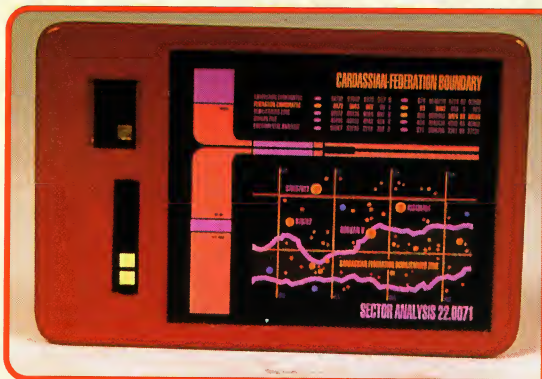
### Interface

A user interface is provided by both built-in electro-sensitive areas of the casing and touch areas on the display screen. These are operated like any other multi-layer panel found in modern starships. The interface areas are designed for specific data manipulation and storage functions, and can be used to personalize the default setup and offer a corresponding security restriction to a single user.

Custom models can be fabricated aboard **Galaxy-class** starships or any other replication

facility equipped with custom isolinear circuit programming capability.

The earliest models of PADDs measured a standard 10 x 15 centimeters and contained a display area 4.25 times larger than that of a **tricorder**, with generic control interface areas marked in brown. Later models have varied in shape and size, with some offering larger screens and even more designated control surfaces. The smallest PADDs are little larger than palm-sized; the largest are the size of a large tray. In all models, the screens allow the user to control the PADD through a graphical interface.



Because they use the STA, PADDs have access to all the information in the ship's main computers. Information can easily be downloaded to PADDs for ease of use.



Some PADDs use large raised buttons, but this is entirely down to the user, who can customize the PADD in any way he or she wants.



PADDs can easily be replicated on board starships. Special PADDs, like this engineering one, are custom made to suit specific functions.



# Life Support Systems

Aboard any vessel, or space station, the mundane but very necessary life support and environment functions break down into four general areas: atmosphere, gravity, waste management, and emergency systems.

All space vessels and facilities require extensive life support systems to support their crews. These systems are basically the same on all Federation ships and space stations. Life support

systems maintain a single environment, suitable for most Federation races, although individual species, like the **Benzites**, may require supplemental devices, such as respirators to help them breathe.

Life support systems have to meet the highest safety standards. On **Galaxy-class** starships they are designed with multiple backups and redundant safety checks that protect the crew, even in the event of multiple systems failure. For instance, the atmospheric support system to the Main Bridge features seven independent safety interlocks.

Except for gravity, which is created by generators throughout the ship, this safety net includes mutually supportive parallel trunk lines and a reserve utilities distribution network for limited supplies of basics such as air, power and water. Life support equipment centers are on Decks 6, 9 and 13 in the primary hull, and Decks 21,

24, and 34 in the engineering hull.

In the rare event of a system wide failure, there will still be sufficient atmosphere to maintain the crew for several hours. The exact length of time will depend on the number of personnel on board.

## Atmosphere

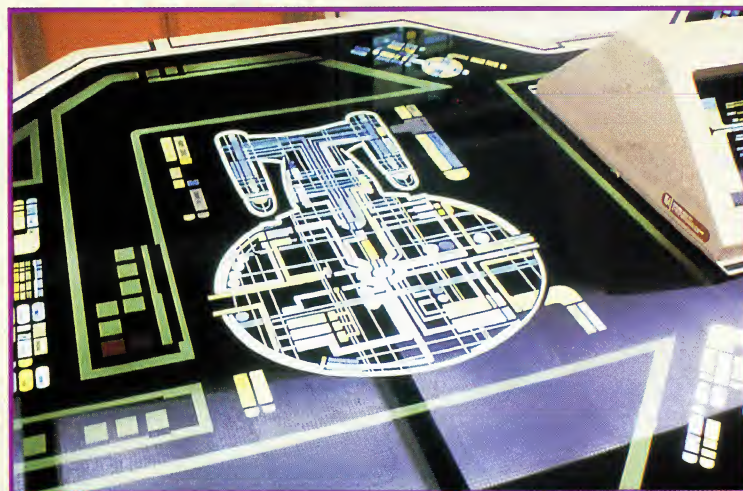
Reflecting the overall ergonomic design, an oxygen-nitrogen atmosphere is maintained for **Class-M** life forms as a shipwide norm. Per standard 102.19 set by **Starfleet Regulatory Agency**, this amounts to air at 26° C, and 45% relative humidity at a pressure maintained at 101 kilopascals, amounting to 78% nitrogen, 21% oxygen, and 1% trace gases.

On the **Galaxy class**, some 10% of the habitable living space can be adjusted to classes H, K or L environmental norms without hardware modifications. Another 2% are equipped for swapout to classes N and N(2). However, the entire ship can be altered for natives of classes H-K-L planets with the replacement of atmospheric processor modules in a major **Starbase** refit.

Processors are located throughout the ship at a rate of about two redundant units per every

▼ **All ship's systems, including life support, can be monitored from Main Engineering. If there is a shipwide life support failure, the engineering staff will have a minimum of 30 minutes to restore the systems before the ship becomes uninhabitable.**

▲ **Ships maintain an atmosphere roughly equivalent to that of a Class-M planet. This is suitable for most Federation member species. However some races, such as the Benzites, need additional breathing apparatus.**



50 cubic meters of habitable ship's volume. The units combine carbon-dioxide removal with oxygen replenishment, mostly accomplished via natural photosynthetic bioprocessors. Normal maintenance calls for each side of the parallel system to take the load every 96-hour cycle, which allows for maintenance on the other, although individual units can be switched between the two for greater flexibility and redundancy.

The third backup atmospheric net can provide up to 50% of the system capacity for up to 24 hours. In addition, if the main and reserve atmospheric systems fail, contingency atmospheric modules, available at most corridor junctions,

◀ **Some life support systems, including gravity generators, can be adjusted to accommodate the needs of individual species. Outside her quarters, where gravity is maintained for humans, Ensign Melora Paslar must use an exo-skeleton.**

can cover evacuation, repair, or shelter-seeking time of approximately 30 minutes.

## Artificial gravity

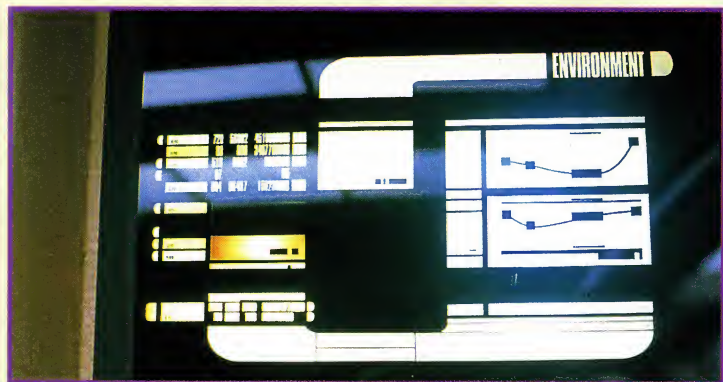
Aside from the ease of mobility for work and play it affords, and the pleasing 'natural' feel, artificial gravity has long been known to be practically indispensable for off-world living, due to its necessity for cellular growth and health.

For the **Galaxy-class** starship, hundreds of simple synthetic gravity generators provide the Class-M norm, tied in to the inertial dampers to counteract acceleration effects. In an effect much like the tractor beam, each generator creates a gravity field by using a controlled stream of gravitons generated by a superconducting stator rotating at speeds over 125,540 rpm, powered by energy tapped from the electro-plasma system (EPS). The stator, built of **thoronium arkenide**, is in turn suspended within pressurized **chrylon gas** in the center of a





# Life Support Systems



hollow sealed chamber of **anicium titanide 454**, measuring only 50 cm in diameter and 25 cm tall.

This device provides a graviton field of only a few picoseconds, so the decay time demands that generators be located every 30 meters or so. Thus, the ship at large includes two networks of 400 generators each in the primary hull, and two more networks of 200 each in the engineering hull. The generators are tied together by small waveguide conduits to allow 'field bleed' in cases of extreme maneuvering and inertial movement.

Each stator is built in suspended state, and is maintained with only a synchronizing EPS energy pulse every hour or so. In the case of EPS loss, the stator will provide an attraction field for up to 240 minutes, with a dip down to only about 0.8g predicted. Sinesoidal ribs on the inner surface of each generator's sealed cylinder absorb motions with an amplitude up to 6 cm per second.

The crew are protected from the effects of acceleration by the inertial damping field, which enables the ship to accelerate to high speeds without pulverizing ship's personnel.



**Forcefields prevent atmosphere from escaping the ship even when bay doors are open. If the atmosphere has been polluted by dangerous gases, and emergency systems are offline, the forcefield can be released manually.**

Since no starships can carry the required amounts of food and water for extended missions, recycling and waste reclamation is a must.

Aboard the *Galaxy-class*, complexes on Decks 6, 13 and 24 include treatment and recycling units for liquid waste, all of which is recycled into fresh water, food replication, or general matter replication.

## Waste management

Solid waste is handled in processors on Decks 9, 13, and 34. These scan for composition, and route items to the most practical means required.

Some 82% of all solid waste can be recycled mechanically, but any material that cannot be directly recycled this way or chemically – including about 5% of all waste classed as hazardous – is set aside for general matter replication. Due to the energy-intensive nature of full matter dematerialization, which is in effect a one-way transporter, most recycling is accomplished by the older and more common methods.

## Reliability

Modern life support systems can cope with a number of situations

**The environment station on the Main Bridge keeps the command staff informed of the ship's status. Environmental systems are highly reliable, and in normal circumstances will not fail for more than 500 years.**

that would have been fatal on earlier starships and space stations. Most notably, hull breaches are automatically contained by forcefields.

Under normal circumstances, life support is extremely reliable. Starfleet calculates that, barring a serious accident, life support failure should only occur once every five hundred years.

## Backup systems

Despite the redundancy built into all starship systems, designers must allow for emergency backup systems in case of system loss or damage.

For the *Galaxy class*, the philosophy is twofold – a 30-minute shipwide lighting and power backup system to cover repair time if needed, and 52 designated emergency shelters, such as the forward observation

lounge at Deck 10, Section 1.

The backup system includes 425 of the corridor junction modules cited earlier which, in addition to atmospherics, include emergency lighting and batteries. The shelters, powered by a series of dedicated and protected power trunks, are designed to sustain up to 65 crew members for up to 36 hours. They also include 24 hours' worth of air, water, food and power supplies independent of even the backup, as well as two emergency pressure garments.

## Evacuation options

Even in the event of an emergency, it is highly unlikely that life support will fail throughout the ship. In the event of a partial systems failure, the Commanding Officer may opt to evacuate the crew from the affected sections.

In case of a severe failure, the crew may be evacuated or, on a *Galaxy-class* starship, the Commanding Officer may initiate a saucer separation, with the entire crew taking refuge in the unaffected section.

## EMERGENCIES



**1 In the event of a shipwide systems failure, emergency backup systems provide sufficient power to maintain emergency lighting and atmosphere while ship's personnel restore systems or arrange for evacuation.**

**2 If the hull is breached emergency forcefields seal the damaged area. However, such systems are not always quick enough to prevent the loss of personnel before atmospheric integrity is restored.**



**3 Without a breathable atmosphere ship's personnel have only minutes to live. Backup systems ensure that atmosphere is maintained for at least 30 minutes, even when main power is offline.**





FILE 68 STAR TREK: The Original Series

# 'What Are Little Girls Made Of?'

Christine Chapel has been waiting to be reunited with her fiancé, Dr. Roger Korby, for years. Now, in the depths of space, she has found him. But something about Dr. Korby is wrong, and soon Kirk and his crew are threatened by the ancient technology of a long dead race.

## CAPTAIN'S LOG

STARDATE: 2712.4

"A signal from planet Exo III. Dr. Roger Korby has been located, he and part of his expedition remaining alive due to the discovery of underground ruins left by the former inhabitants of this world."

The *U.S.S. Enterprise NCC-1701* enters orbit around Exo III, where Nurse Chapel hopes to be reunited with her lover, Roger Korby. Mr. Spock points out that Korby has not been heard from in five years, and that the chances of anyone surviving on the planet seem slim. Moments later, Korby himself calls in.

Kirk and Chapel beam down to a maze of tunnels where they meet Dr. Brown, Korby's assistant. Though Chapel and Brown are old friends, he seems cool, almost mechanical in his responses.

Brown takes Kirk and Chapel to Korby's quarters, where they meet Andrea, a beautiful woman, and Korby himself.

## Ancient machines

Korby stops Kirk from communicating with the ship. During a scuffle, Kirk wounds Dr. Brown, revealing him to be an android. Kirk is then attacked by another android, the giant Ruk.

Andrea is also an android; she and Ruk were left behind by the Old Ones, the original inhabitants of Exo III.

Korby wants Kirk's help spreading androids throughout the Galaxy. He tells him that by living in immortal android bodies, mankind has an opportunity to create a perfect society.

When Kirk refuses to help, Korby makes an android copy of him. However, Kirk manages to give the android some surprising attitudes. When the android returns to the *Enterprise*, he insults Spock, who quickly realizes that something is not right. Eventually, Ruk and the Kirk-android are both destroyed.

Kirk and Chapel are surprised to discover that Korby himself is an android. The man Christine loved is long dead, and she knows she could never love this cold duplicate. With his plan collapsing around him and unable to face the truth about his own nature, the Korby-android holds Andrea close and destroys both of them with a single phaser blast.

## ON SCREEN...



**1** Captain Kirk and Nurse Chapel beam down to a series of underground caverns on Exo III. They are soon met by Dr. Brown, who takes them to meet Roger Korby.



**2** The android Ruk watches Kirk and Chapel from the shadows. He is thousands of years old and is a product of the lost technology of the Old Ones.



**3** Korby makes an android copy of Kirk. He plans to take control of the *U.S.S. ENTERPRISE* and spread his androids through the Galaxy.



**4** The android Kirk is an almost exact copy of the captain, but although they look and sound the same Kirk has managed to imprint it with some uncharacteristic ideas.



**5** When Kirk calls him a "half breed", Spock realizes that something is wrong. He soon discovers that the Kirk who returned to the ship is an android.



**6** Eventually it is revealed that Korby is an android. Unable to deal with this truth, he turns a phaser on himself and Andrea, destroying the last of the androids.

## STARSHIP FACTS

Nurse Christine Chapel gave up a career in bio-research to sign aboard the *U.S.S. Enterprise NCC-1701*.





# 'Dagger of the Mind'

The *U.S.S. Enterprise* completes a routine mission to the Tantalus V penal colony, but before they leave a stowaway beams aboard. The *Enterprise's* guest is not an escaped prisoner, though: he's the colony's former director, and something on the planet has driven him insane.

## CAPTAIN'S LOG STARDATE: 2715.2

"Standard orbit around Tantalus V. Mission: routine investigation and report as per ship's medical log. As for my last entry, it seems I will get to meet Dr. Adams at last. However, I would have preferred other circumstances."

**T**he *U.S.S. Enterprise* NCC-1701 has just completed a mission to the Tantalus V penal colony when a stowaway is discovered on board.

The stowaway is **Dr. Simon Van Gelder**, the former director of the penal colony. The current director, **Dr. Adams**, claims that a failed experiment rendered Van Gelder insane. Van Gelder is left in sickbay while **Kirk** and **Dr. Helen Noel**, a member of the medical staff with psychiatric experience, go to the colony.

The facility seems normal, although Kirk finds the inmates a little 'blank.' The captain is curious about the **neural neutralizer** device that injured Van Gelder. According to Adams, the device neutralizes brain waves and relaxes inmates for a short period of time. On the ship, an agitated Van Gelder warns that Kirk and Noel are in danger.

## Mind control

That night, Kirk and Noel secretly test the neutralizer on the captain. He instantly accepts Noel's suggestions as reality. Contrary to Adams' claims, it seems the machine is highly effective. During a test, Noel is overpowered by Adams, who brainwashes Kirk into forgetting his mission. He convinces the captain he is madly in love with Noel and, when he wakes, Kirk only has thoughts for her. She reminds Kirk of their mission and he sends her to dismantle the power and shut down the security forcefield so that the *Enterprise* can reach them.

Meanwhile, aboard the ship, **Mr. Spock** mind-melds with Van Gelder. Spock learns the director has been brainwashed by Adams. Spock tries to contact Kirk, but is only able to get through when Noel shuts the power off.

With the power off, Kirk knocks out Dr. Adams and escapes from the treatment room. Power is returned, the neural neutralizer is reactivated, and Dr. Adams is exposed to the machine. With no one to influence his now empty mind, he dies.

## STARSHIP FACTS

**A** The Tantalus V penal colony is highly regarded for its work until Captain Kirk exposes the negative side effects of the neural neutralizer.

## ON SCREEN...



**1** Something on the planet has made Dr. Van Gelder insane. According to Dr. Adams it was an unfortunate accident, but Kirk isn't so sure.



**2** Dr. Adams greets Captain Kirk and Dr. Noel. Everything on the Tantalus colony seems normal, but the inmates are strangely 'blank'.



**3** Kirk decides to try out the neural neutralizer for himself. According to Dr. Adams, it will have little effect, except to relax him.



**4** Dr. Adams surprises Dr. Noel and uses the neural neutralizer to brainwash Kirk. It seems that the machine is far from harmless.



**5** On the *U.S.S. ENTERPRISE* Spock decides to mind-meld with Van Gelder to find out what really happened on the penal colony.



**6** When the power is restored, Dr. Adams is subjected to the full power of the neural neutralizer. Without anyone to control him, his mind simply shuts down.



# 'Emanations'

When the crew of the *U.S.S. Voyager NCC-74656* discover a new element, they think they may have found a way to make their journey home easier. But when Harry Kim disappears, the crew are forced to risk the ship to get him back from another dimension.

## CAPTAIN'S LOG

STARDATE: 48623.5

"There are 246 elements known to Federation science. We believe we have just discovered the 247th inside the ring system of a Class-D planet."

The *U.S.S. Voyager NCC-74656* discovers a new element in the rings around a planet. Commander Chakotay takes a team to one of the asteroids, where they find a burial chamber.

The element is coming from the bodies. As the away team examine the site, a subspace distortion forms. The away team beam back to the *Voyager*, but when they materialize Harry Kim is missing. In his place is a corpse. The body only died recently, and in sickbay the Doctor revives it.

Meanwhile, Harry finds himself in a cenotaph, a large coffin-like casket, on an alien world. The aliens believe that Harry has come from the next Emanation, which they believe is the afterlife, and are disturbed when he tells them that he saw dead bodies. Dr. Nerla, a thanatologist (an expert on death), tells Harry that the cenotaph terminates a person's life just before a spectral rupture appears to take the dead person to the next Emanation.

On the *Voyager*, the revived alien, Ptera, is disturbed to discover that she isn't in the afterlife. As she talks, a subspace disturbance forms on the ship, depositing a body near the warp core.

Meanwhile, one of the aliens, Hatil, is having doubts about his death. He tells Harry that he is a burden to his family, and that he is only going to the next Emanation to relieve the pressure on them.

## Coming home

Ptera wants to go home and is prepared to risk dying. B'Elanna attempts to replicate the accident, but Ptera dies in the attempt.

Dr. Nerla tells Harry that they plan to take him to a medical facility, and refuses to allow him to examine the cenotaph. Harry changes places with Hatil. Wrapped in Hatil's shroud, Harry climbs into the cenotaph and is powerless as it kills him.

The subspace disturbances are putting the *Voyager* in danger, and Janeway is about to leave when Harry's corpse appears. The body is beamed to sickbay, where the Doctor is able to revive a relieved Ensign Kim.

## ON SCREEN...



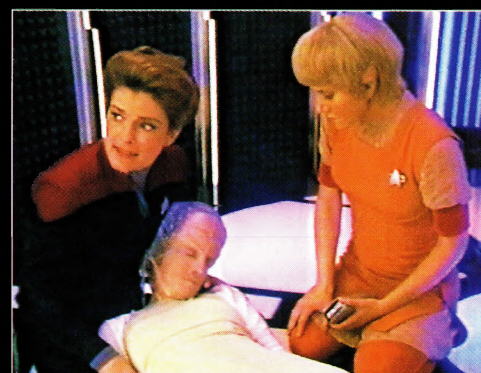
**1** The *U.S.S. VOYAGER* away team are surprised to find the asteroid filled with bodies. The element they had detected is coming from these corpses.



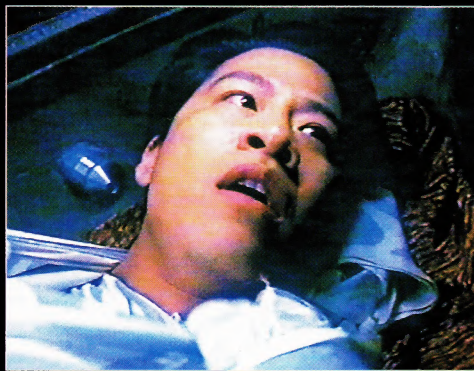
**2** When the away team return to the ship, they are one member short. A dead body has taken Harry Kim's place. B'Elanna's scans show that it can be revived.



**3** Harry finds himself in a cenotaph. It seems that a transporter accident has sent him into another dimension. The inhabitants of this planet believe that he has come back from the afterlife, and are shocked when he tells them he has seen dead bodies on the 'other side.'



**4** Ptera dies during an attempt to recreate the transporter accident, but she was more than willing to risk death in an attempt to return to her own dimension.



**5** Harry waits for the cenotaph to kill him. He hopes that when the *VOYAGER* crew find him, their advanced medical knowledge will be enough to revive him.



**6** Captain Janeway tells Harry to take some time to think about what has happened to him. It's not every day that someone comes back from the dead.

## STARSHIP FACTS

Neural energy from the corpses forms an unusual field that may be conscious – perhaps even a kind of afterlife.



# 'Prime Factors'

Captain Janeway is delighted when the pleasure-loving Sikarians offer her crew their hospitality, but a welcome vacation turns into something more when Harry Kim discovers that their hosts have the technology to send them halfway back to the Alpha Quadrant.

While the **U.S.S. Voyager** crew are on shore leave on **Sikaris**, a young woman called **Eudana** uses a transporter platform to take **Harry Kim** to a planet 40,000 light years away. Harry returns to **Sikaris** and tells **Janeway** about the platform, which folds space. But the Magistrate, **Gath Labin**, tells her that his laws forbid him from sharing the technology.

**Tuvok** points out that Gath's refusal may not be final. Stories are very important to the **Sikarians**, and Harry suggests trading the stories in the **U.S.S. Voyager's** databanks for the technology. Janeway makes the offer to Gath, who agrees to consider it.

Gath's assistant, **Jaret**, tells Harry that Gath will not help the **Voyager** crew, and offers to make the exchange himself – illegally.

Janeway is dismayed at Harry's news, and returns to the surface where she confronts Gath. She tells him that her crew cannot stay with the Sikarians, who are only interested in instant gratification. An angry Gath tells the **Voyager** crew to leave **Sikaris** at once.

## Act of betrayal

**Seska** and **Carey** persuade **B'Elanna** to make the exchange behind Janeway's back. But when they get to the transporter room, they are interrupted by **Tuvok**, who tells them he will make the exchange.

**Tuvok** hands the Sikarian device to **Torres**. The engineers soon realize that the Sikarian planet is needed to focus the energy that is used to fold space and, unable to wait, they activate the device. But the Sikarian technology is incompatible with **Federation** engines, and **B'Elanna** has to destroy the device to prevent a warp core breach.

**B'Elanna** turns herself in, but **Tuvok** stops her taking responsibility for the incident – he was the senior officer involved. He tells Janeway that he acted to save her from a moral dilemma. A stunned Janeway cannot believe what he has done, and tells her friend how deeply he has disappointed her.

## CAPTAIN'S LOG

STARDATE: 49842.5

"The crew is enjoying an evening on **Sikaris**. They are discovering, to their delight, that reports of this species' hospitality have not been exaggerated."

## ON SCREEN...



1 The Sikarians are an extremely generous people, and take great pleasure in making the crew of the **U.S.S. VOYAGER** as happy as possible.



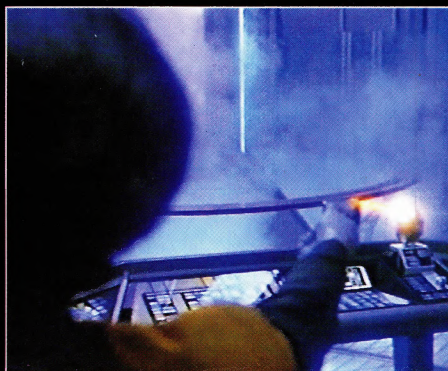
2 When the sun comes up, Harry realizes that he isn't on **Sikaris** any more. By folding space, Sikarian transporters can make a journey of 40,000 light years.



3 Jaret tells Harry that Gath has no intention of trading the transporter technology. But he is willing to break the law to get the **VOYAGER's** stories.



4 When **Tuvok** catches them, **Seska** and the other conspirators are surprised to discover that he is prepared to disobey the captain.



5 The Sikarian technology is incompatible, and it is only **B'Elanna's** quick thinking that saves the ship from a warp core breach.



6 Janeway is deeply disappointed in **Tuvok**. She is stunned that her trusted friend could use logic to justify such questionable actions.

## STARSHIP FACTS

Janeway understands Gath's position because the **Prime Directive** prevents **Federation** officers sharing their technology with other cultures.